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ABSTRACT

In 1992, a study was conducted to determine whether student placement rates into college-level courses varied across subgroups of students at Golden West College (GWC), and, if so, the extent to which this disproportionate impact (DI) occurred. The standard of the Equal Employment Opportunity Commission (EEOC) for employee selection holds that DI is evidenced when the selection rate of an impacted group is less than 80% of that for the majority group. This standard was applied to the results of the English writing portion of the college boards assessment and placement services (APS) test administered to incoming GWC students. Data were compiled for all those who were tested between early December 1991, and the end of June 1992, totaling 1,851 students. In the case of student ethnicity, there was some evidence of DI in the use of the APS for placement recommendations of Asian students, but not for Hispanic students. Similarly, students reporting verified learning disabilities were recommended to degree-applicable courses at a rate below the EEOC standard, indicating some degree of DI. There was no evidence of DI for any age group. A recent monograph summarizing similar evaluations indicated that there was evidence of DI, based on the EEOC standard, in over 60% of the calculations at 11 community colleges. The GWC analyses resulted in evidence of DI in 22.2% of the calculations. Appendixes provide data tables and graphs. (JMC)

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English Placement Recommendations at Golden West College: An Analysis of Disproportionate Impact

Golden West College
July 1992

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Abstract

Analyses of the rates at which placement recommendations for college level and basic skills English writing courses are made, based upon the College Board's ASP English test, were conducted. Specific comparisons were made for the student background characteristics of ethnicity, sex, learning disability status, and age. Evidence for disproportionate impact in English course placement recommendations was found only in the cases of Asian students and students reporting a verified learning disability. Follow-up investigations into the reason for the apparent disproportionate for these two groups are necessary. The need to help students to take the appropriate test, with special accommodations if warranted, is also identified.

English Placement Recommendations at Golden West College:
An Analysis of Disproportionate Impact

The issue of disproportionate impact as it relates to the assessment and placement of college students involves the extent to which placement rates into college level courses vary across subgroups of students. Differences in placement rates may be due to the interactive effects of a number of factors and would serve as a signal that a closer look at the test in question and its relationship with student background characteristics is needed. The study reported here was undertaken to determine whether there is evidence for disproportionate impact in English course placement at Golden West College. For those cases where disproportionate impact is found, further investigation should be undertaken to determine the reason the disproportionate impact.

While the discussion of what constitutes "differential placement rates" continues, one standard has emerged. The standard comes from EEOC (Equal Employment Opportunity Commission) guidelines concerning disproportionate impact in employee selection. It holds that disproportionate impact is evidenced when the selection rate of an impacted group is less than 80% that of the majority group. The Guidelines make it clear that the 80% value should be used with some care and interpreted within the full context of the local setting. As an example, they note that "smaller differences in selection rate may constitute adverse impact where they are significant in both statistical and practical terms" and also that "greater

differences in selection rate may not constitute adverse impact where the differences are based on small numbers and are not statistically significant" (Uniform Guidelines on Employee Selection Procedures, 1978). This "80%" level has been offered as a reasonable criterion for disproportionate impact studies of placement tests used in the California Community Colleges, with the primary difference being that placement rates into courses are targeted, rather than selection for employment.

English Course Placement Recommendations.

The English writing portion of the College Board Assessment and Placement Services (APS) test is administered to incoming GWC students whose primary language is English, for the purpose of making an initial English course placement recommendation. This instrument was piloted in a sample of English courses during January 1991 and was formally adopted by the English department in March 1991. Data were compiled for all students who were tested between early December 1991 (when the local database was established) and the end of June 1992, totalling 1,851 students.

According to the placement rule (see Table 1; all Tables and Figures appear in the Appendix), students who score 22 or higher (out of 40 possible) are recommended to take a college level course (English 100--Freshman Composition, or English 10--Writing Essentials), while various ranges of lower scores are associated with recommendations for English 9 (Beginning Writing), and possibly English as a Second Language courses. (The descriptors "degree applicable" and "college level" are used interchangeably in this report, as are "non-degree applicable", "precollegiate",

and "basic skills".) Overall rates of placement into these courses can be readily determined, as can such rates for various subgroups. For purposes of assessing possible disproportionate impact, the critical categories are recommended placement into non-degree applicable courses (English 9 or below) versus degree-applicable courses (English 10 or English 100).

Student Ethnicity. Table 2a presents the proportion of students scoring within key APS score ranges, broken down by ethnicity. As the table shows, 1,166 (64.2%) of those tested identified themselves as White, 276 (15.2%) as Hispanic, and 196 (10.8%) as Asian. The remaining 178 (9.8%) consisted of students who indicated an ethnic category other than White, Hispanic, or Asian, or did not respond to the question. (The following analysis is limited to the three groups comprising at least 10% of the sample because the proportions for other groups are too small to support reliable conclusions. As additional data are accumulated, analyses of other groups such as American Indian/Alaskan Native, Black, Pacific Islander, and Filipino should be conducted. For the present report, these groups are combined into the "other" category, and no disproportionate impact analyses are performed.)

The number and percent of students in each of the ethnic categories who were recommended to degree-applicable and non-degree applicable English writing courses are displayed in Table 2b. A total of 70.6% of the entire sample was recommended to college level English courses (English 10 or English 100). Over three-fourths (76.8%) of the White students were recommended to

these courses; the comparable placement recommendation rates for Hispanics and Asians were 64.5% and 49.0%, respectively. This information is also depicted in Figure 1.

As noted earlier, EEOC guidelines indicate that all relevant subgroups should be selected (in this case, recommended for enrollment into English 10 or English 100) at a rate that is at least 80% of the rate of the majority group. For these analyses, the "majority" group is typically the group with the highest selection/placement rate. The critical value based on the EEOC 80% standard in this case is 61.44% (80% of the 76.8% rate for Whites). Therefore the placement rate of 64.5% for Hispanics meets the standard, whereas the rate of 49.0% for Asians fails to do so. Thus, there <u>is</u> evidence that a disproportionate impact exists in placement recommendations for Asian students, based on the APS English test, but not for Hispanics.

<u>Student Sex</u>. Table 3a presents the number and percent of females and males receiving the various English writing course placement recommendations. The sample consists of 53.4% females and 46.6% males. Table 3b shows placement recommendations for the two key categories in question--degree-applicable and non-degree-applicable crossed with sex of the student tested. This information is also depicted in Figure 2. About three-fourths (75.4%) of the females tested were recommended to college-level courses whereas slightly less than two-thirds (65.3%) of the males received such a recommendation. Applying the EEOC 80% standard, the critical percentage is 60.3% (80% of the female rate of 75.4%). Since the placement rate for males exceeds this

value, there is no evidence for disproportionate impact involving the sex of the student being tested.

Student Learning Disability Status. Information on rates of placement for students with self-identified learning disabilities (who total 46, for 2.6% of the sample) is presented in Table 4a. Seventy-two percent of the those who indicated that they do not have a verified learning disability were recommended to degree-applicable English courses; exactly half of those reporting learning disabilities received such a recommendation (see Table 4b; Figure 3 presents this information graphically). The EEOC standard of 80% results in a critical percent of 57.6% (80% of the rate of 72.0% of students not reporting a verified learning disability). There is, therefore, some evidence of disproportionate impact, since in this case the impacted group has a placement rate that is less than 80% of the majority group.

Student Age. Table 5a presents the placement recommendation rates for the following age categories; 18 or below, 19 or 20, 21 through 25, 26 through 29, 30 through 39, and 40 or above. While these categories do not correspond perfectly with the statewide MIS categories, they nevertheless divide the age continuum into meaningful subgroups. Further, the consistency in placement rates across these groups is striking.

Rates of placement into basic skills and collegiate level English courses for various age categories are presented in Table 5b. The EEOC guideline of 80% results in a critical value of 59.0% (80% of the rate of 73.7% for the age group 30-39). All age categories are well above this critical value, therefore it

appears that there is no disproportionate impact in placement recommendations due to the age of the student.

Summary and Discussion.

Table 6 summarizes the analyses reported above. In the case of student ethnicity, there is some evidence of disproportionate impact in the use of the APS for placement recommendations of Asian students, but not for Hispanic students. Similarly, students reporting verified learning disabilities are recommended to degree-applicable courses at a rate below the EEOC standard, indicating some degree of disproportionate impact. Finally, there is no evidence of disproportionate impact concerning age. The rate at which males are recommended to degree level courses is within 80% of the rate for females, indicating no disproportionate impact in the case of the sex of the student.

A recent monograph summarizing similar evaluations indicated that there is evidence for disproportionate impact in over 60% of the calculations using EEOC guidelines at eleven community colleges (Matriculation Local Research Options Committee, 1992). Of course, this represents a combination of many different tests used in a variety of ways. Nevertheless, it suggests that disproportionate impact is the norm rather than the exception in the California Community Colleges. The present set of analyses resulted in evidence for disproportionate impact in two out of nine (22.2%) of the calculations. These analyses should be seen as a first test of disproportionate impact--followup is necessary both for the cases where evidence for disporportionate impact was found and for those where no such evidence was found.

The issue now becomes one of interpreting the evidence that suggests disproportionate impact exists for Asian students and students reporting learning disabilities. It is now necessary to closely examine the APS test itself, and its interaction with ethnicity and learning disabilities. A large number of variables may interact to moderate the relationship between these student background characteristics and performance on the APS (as well as performance in class). Stated differently, student background characteristics, per se, are not causes of the differential performance that results in the different rates of placement documented in this report. Rather, more immediate determinants of performance may vary systematically with background characteristics resulting in the observed relationships between these characteristics and the full array of outcome indices. These moderating factors may include previous courses taken, performance in those courses and time since they were taken, educational goal, experience with the English language, experience with tests, many other variables relating to educational preparation, and an assortment of affective and motivational variables.

Figure 5 offers a schematic representation of the likely role of moderator variables. Unlike fixed student background characteristics, these variables are of greater educational importance because their effects can be modified to various extents. That is, for example, a poorly prepared student can be remediated and a test naive student can acquire test-taking skills. The task now is to determine which moderator variable(s)

are responsible for the differential placement rates reported here. Once this is done, it will be possible to address their effects with appropriate interventions.

In this conceptualization the primary determinants of performance are the moderator variables, and student background characteristics are viewed merely as occasional correlates of these moderator variables. It should be noted, however, that while this is the predominant view, it is not the consensus. As an example, Halpern (1986) reviews research that addresses three possible biological explanations for sex differences in cognitive performance, namely genetic determinants of sex-linked behavior, differential effects of sex hormones, and sex differences in brain structure and organization. A recent review of this literature concluded that "although there are large bodies of research on sexual dimorphism, hormonal influences, and other related topics in the biological basis of behavior, evidence for the relationship of these cognitive abilities is still contradictory and incomplete" (Wilder & Powell, 1989, p. 15). Thus, while a few researchers believe that some fixed background characteristics can be direct causes of test performance, this minority view is not well supported.

Finally, a few caveats warrant reemphasizing. First, the EEOC criterion is just a guideline. It would be a mistake to assume that all groups not identified as impacted in this study are truly free from such impact or that those for which evidence of disproportionate impact was found are harmed by some inherent bias of the test. Second, all information on student background

characteristics is obtained via self-reports. While this method tends to be quite reliable, it is possible that in some cases students may have provided incorrect information, either intentionally, due to carelessness, or because of misinterpretation of a question. This is perhaps most likely with the learning disability dimension. The question on the survey form reads "I have a verified learning disability (such as dyslexia)"; students may be unsure about the meaning of "verified" or may respond affirmatively only for dyslexia. Finally, since the learning disability category itself is multidimensional, even if all responses are valid, interpretation is difficult.

Recommendations.

1. Follow-up investigations are necessary to explain why disproportionate impact was found in the case of Asians and students with verified learning disabilities.
2. The "Learning Disability" category itself should be clarified. Perhaps this information gathered at the time of assessment can be supplemented by more detailed information from the students' permanent records, thereby allowing separate disproportionate impact analyses for particular disabilities.
3. It may be the case that some of the students reporting learning disabilities should have been tested under special conditions. While the Assessment Center, in cooperation with the Disabled Students Office routinely tests students with disabilities under special conditions, it may be that some students with marginal disabilities who could benefit from this special service are not aware of it. Perhaps information about this service should be better disseminated.
4. It is also possible that a number of the Asian students who took the APS (for native English speakers) should probably have taken the ESL placement tests (for non-native English speakers). Efforts to help all students to take appropriate tests should be strengthened.

5. Disproportionate impact analyses that parallel the analyses reported here for the APS must be conducted for the Mathematics and English as a Second Language placement tests.
6. Differential validity studies must be conducted for all placement tests.

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APPENDIX

Tables are on pages 14-23. Figures are on pages 24-28.

Table 1

Placement Rule for the APS English-Writing Test at Golden West College

Score Range	Placement Recommendation
30 - 40	English 100
28 - 29*	English 10 (or English 100)
22 - 27	English 10
20 - 21*	English 9 (or English 10)
15 - 19	English 9
<= 14	ESL (or English 9)

*Students scoring 28-29 are recommended to English 10; scores of 20-21 are recommended to English 9. In both cases, students may opt to have their Placement Writing Samples evaluated for possible recommendation to the higher course.

Table 2a

Placement Into English Writing Courses, By Ethnicity

Ethnicity \ Placement	Asian	White	Hispanic	Other	Row Total
< English 9	24 (12.2%)	41 (3.5%)	22 (7.8%)	22 (12.4%)	109 (6.0%)
English 9	52 (26.5%)	129 (11.1%)	45 (16.3%)	27 (15.2%)	253 (13.9%)
English 9/ English 10	24 (12.2%)	100 (8.6%)	31 (11.2%)	17 (9.6%)	172 (9.5%)
English 10	64 (32.7%)	410 (35.2%)	102 (40.0%)	68 (38.2%)	644 (35.5%)
English 10/ English 100	16 (8.2%)	119 (10.2%)	26 (9.4%)	15 (8.4%)	176 (9.7%)
English 100	16 (8.2%)	367 (31.5%)	50 (18.2%)	29 (16.3%)	462 (25.4%)
Total	196	1,166	276	178	1,816

Table 2b

Placement Into Basic Skills and College Level English Writing Courses, By Ethnic Category

	Ethnic Category			
Placement Level	Asian	White	Hispanic	Other
Basic Skills Level	100 (51.0%)	270 (23.2%)	98 (35.5%)	66
College Level	96 (49.0%)	896 (76.8%)	178 (64.5%)	112
Total	196	1,166	276	178

Table 3a

Placement Into English Writing Courses, By Sex of Student

	Sex of Student	
Course Placement	Male	Female
Below English 9	71 (8.3%)	39 (4.0%)
English 9	140 (16.3%)	119 (12.1%)
English 9 or English 10	87 (10.1%)	84 (8.5%)
English 10	292 (34.0%)	365 (37.1%)
English 10 or English 100	84 (9.8%)	97 (9.8%)
English 100	186 (21.6%)	281 (28.5%)
Total	860	985

Table 3b

Placement Into Basic Skills and College Level English Writing Courses, By Sex of Student

	Sex of Student	
Placement Level	Male	Female
Precollegiate Level	298 (34.7%)	242 (24.6%)
College Level	562 (65.3%)	743 (75.4%)
Total	860	985

Table 4a

Placement Into English Writing Courses, By Learning Disability Status

	Learning Disability Status	
Course Placement	LD	not LD
Below English 9	6 (13.0%)	94 (5.4%)
English 9	14 (30.4%)	231 (13.4%)
English 9 or English 10	3 (6.5%)	158 (9.2%)
English 10	11 (23.9%)	621 (36.0%)
English 10 or English 100	7 (15.2%)	169 (9.8%)
English 100	5 (10.9%)	453 (26.2%)
Total	46	1726

Table 4b

Placement Into Basic Skills and College Level English Writing Courses, By Learning Disability Status

	Disability Status	
Course Placement	LD	not LD
Precollegiate Level	23 (50.0%)	483 (28.0%)
College Level	23 (50.0%)	1,243 (72.0%)
Total	46	1,726

Table 5a

Placement Into English Writing Courses, By Age of Student

Age / Course Placement	<= 18	19-20	21-25	26-29	30-39	>= 40
Below English 9	39 (4.2%)	19 (9.2%)	20 (6.5%)	10 (7.1%)	12 (7.9%)	7 (7.9%)
English 9	133 (14.4%)	34 (16.4%)	46 (15.0%)	13 (9.3%)	15 (9.9%)	16 (18.0%)
English 9 or English 10	92 (10.0%)	15 (7.2%)	28 (9.2%)	17 (12.1%)	13 (8.6%)	6 (6.7%)
English 10	346 (37.4%)	78 (37.7%)	103 (33.7%)	49 (35.0%)	50 (32.9%)	22 (24.7%)
English 10 or English 100	91 (9.8%)	19 (9.2%)	34 (11.1%)	11 (7.9%)	13 (8.6%)	10 (11.2%)
English 100	223 (24.1%)	42 20.3%)	75 (24.5%)	40 (28.6%)	49 (32.2%)	28 (31.5%)
Column Totals	924	207	306	140	152	89

Table 5b

Placement Into Basic Skills and College Level English Writing Courses, By Age Category

	Age Category					
Placement Level	<=18	19-20	21-25	26-29	30-39	>=40
Precollegiate Level	264 (28.8%)	68 (32.9%)	94 (30.7%)	40 (28.6%)	40 (26.3%)	29 (32.6%)
College Level	660 (71.2%)	139 (67.1%)	212 (69.3%)	100 (71.4%)	112 (73.7%)	39 (67.4%)
Total	924	207	306	140	152	89

Table 6

Summary of Disproportionate Impact Analyses for the APS at Golden West College

Characteristic /Category	Outcome
Ethnicity	
Asian	Evidence for Disproportionate Impact
White	Baseline group
Hispanics	No evidence for Disproportionate Impact
"Other"	N/A
Sex	
Male	No evidence for Disproportionate Impact
Female	Baseline group
Learning Disability Status	
Verified LD	Evidence for Disproportionate Impact
No verified LD	Baseline group
Age	
<= 18	No evidence for Disproportionate Impact
19-20	No evidence for Disproportionate Impact
21-25	No evidence for Disproportionate Impact
26-29	No evidence for Disproportionate Impact
30-39	Baseline group
>=40	No evidence for Disproportionate Impact

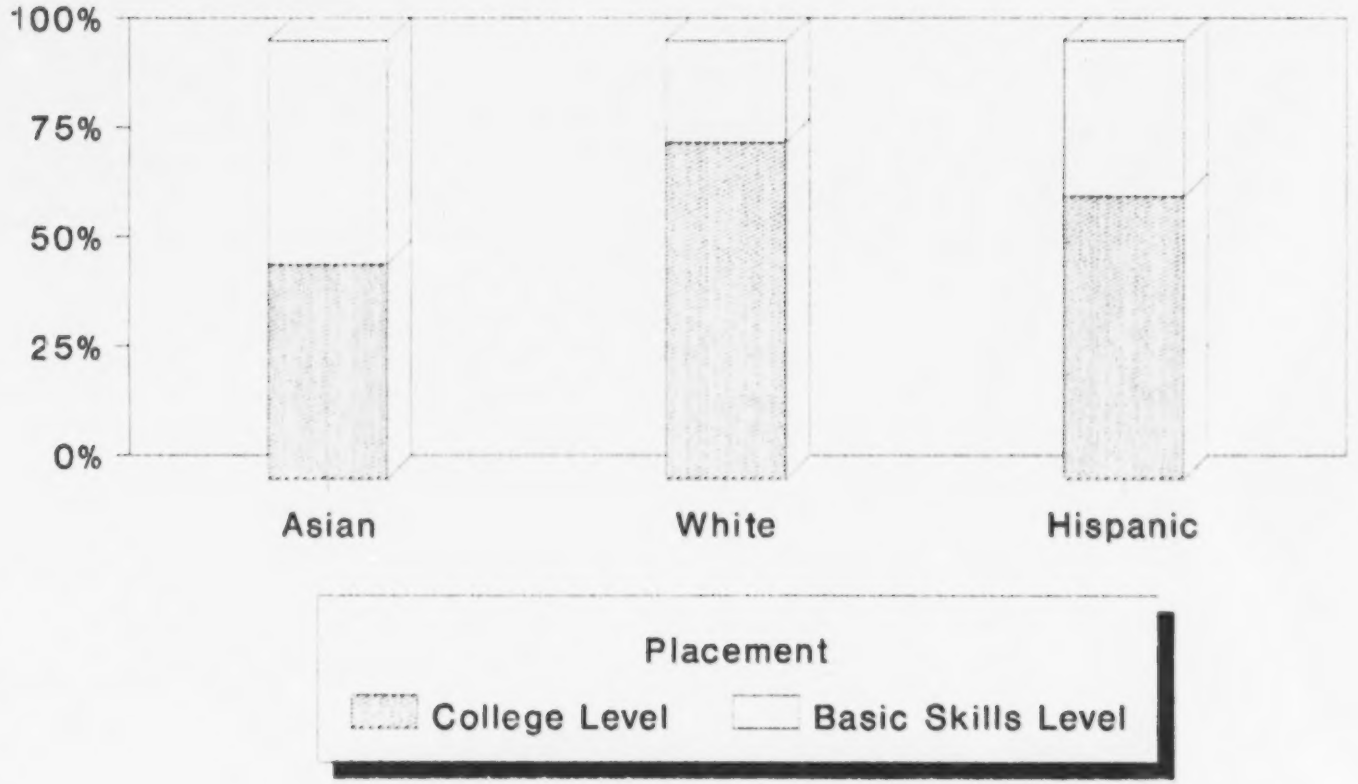

Figure 1. Placement Rates Into Basic Skills and College Level English Writing Courses, By Ethnicity

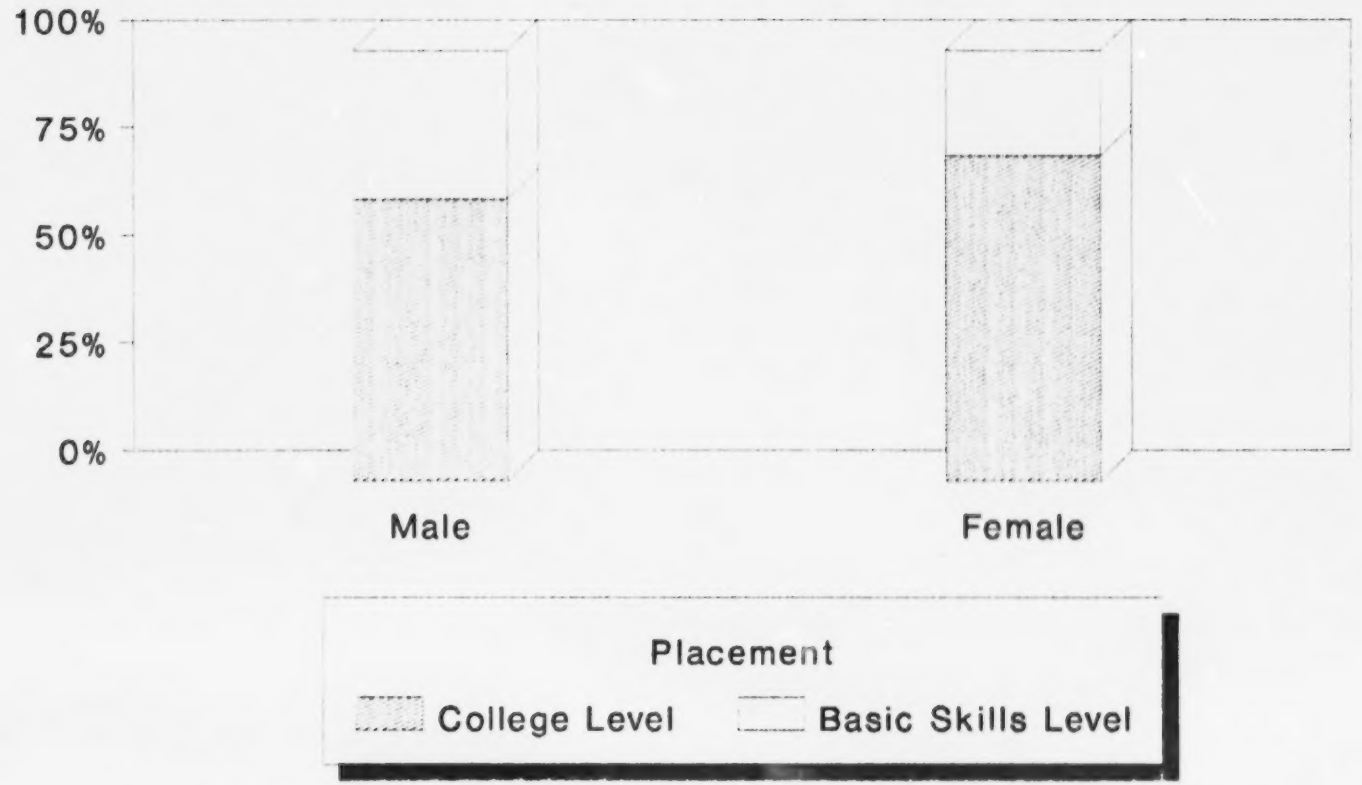

Figure 2. Placement Rates Into Basic Skills and College Level English Writing Courses, By Sex

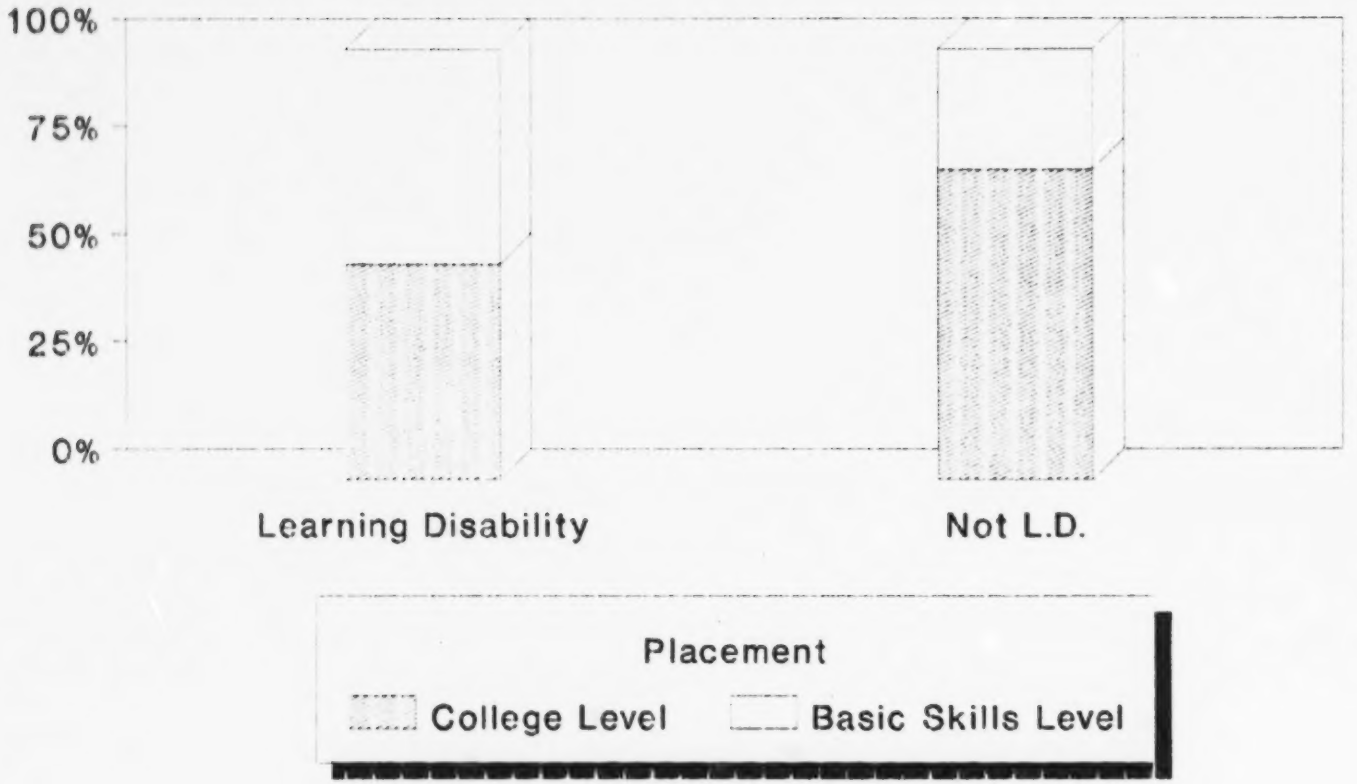

Figure 3. Placement Rates Into Basic Skills and College Level English Writing Courses, By LD Status

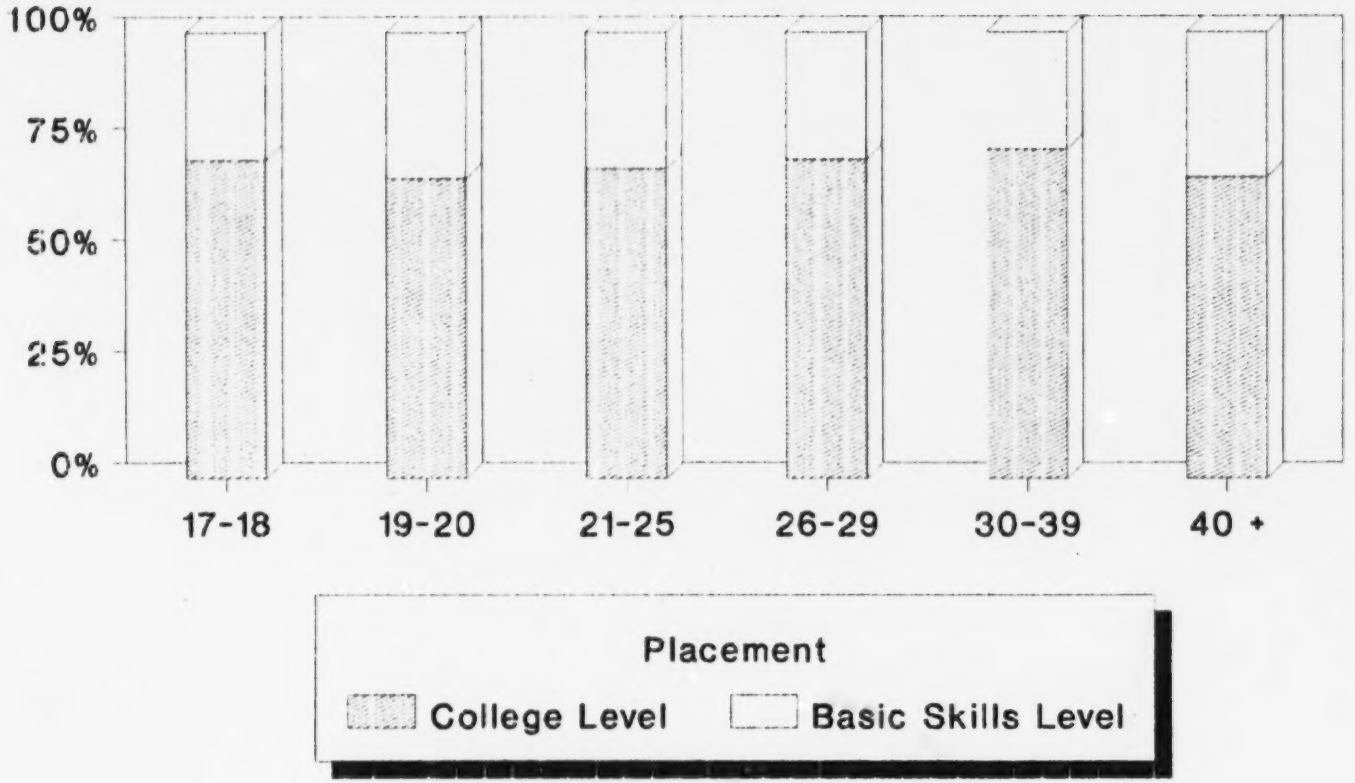

Figure 4. Placement Rates Into Basic Skills and College Level English Writing Courses, By Age Category

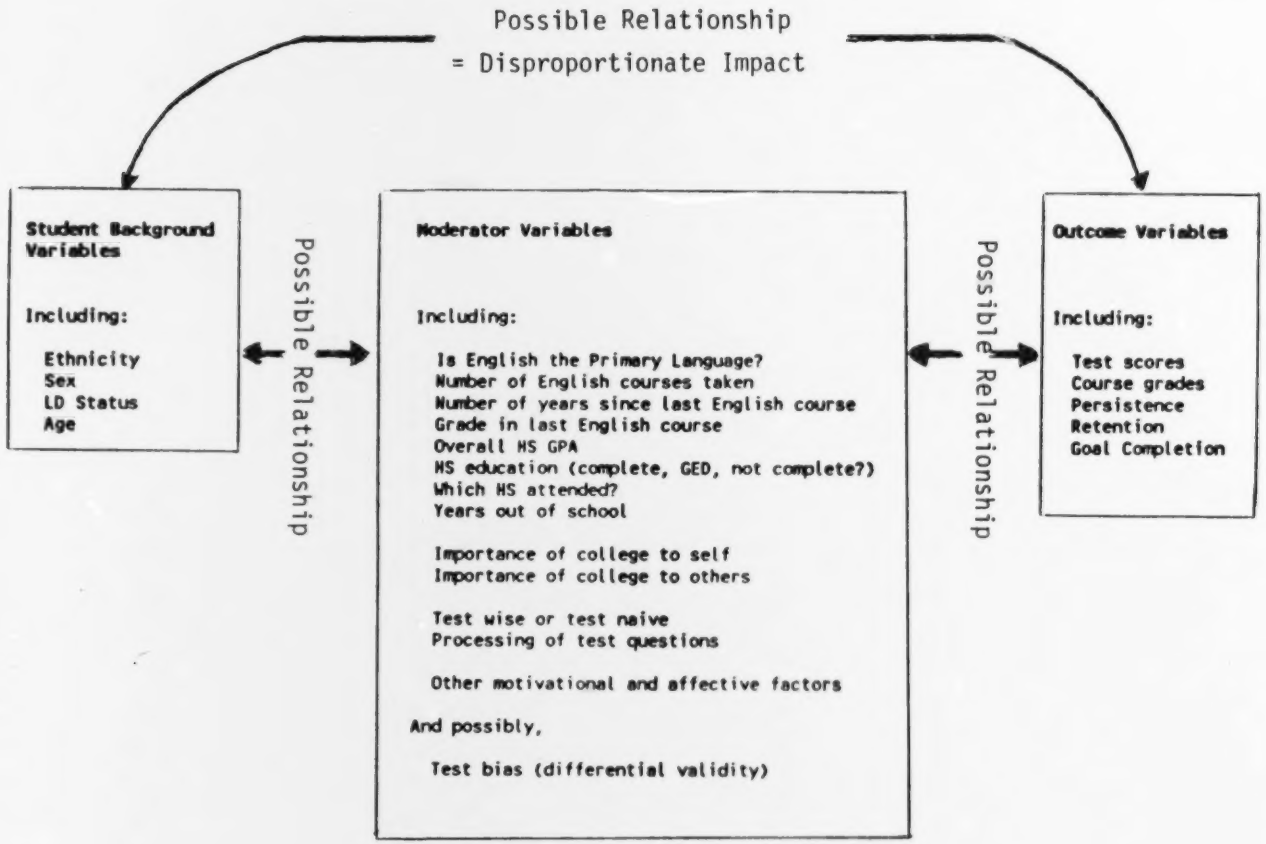

Figure 5

The Relationship Between Student Background Characteristics and Performance: The Role of Moderator Variables

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